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(54) Offset chuck adaptor

(57) The chuck adaptor is mounted on to a lathe between the lathe drive shaft (3) and a turning accessory e.g. a chuck, pointed drive or face plate. The purpose of which is to provide a means of securing the turning accessories at set distances from the central lathe axis, for the intent of "offset turning". The distance of offset is determined by selecting one of many threaded holes (4), into which a stud (7, fig. 6) or pointed drive (9) are secured. By using a combination of one or more of the offset holes and the indexing scores (13), enables the turner to produce items with multi faceted surfaces with varying central axis.

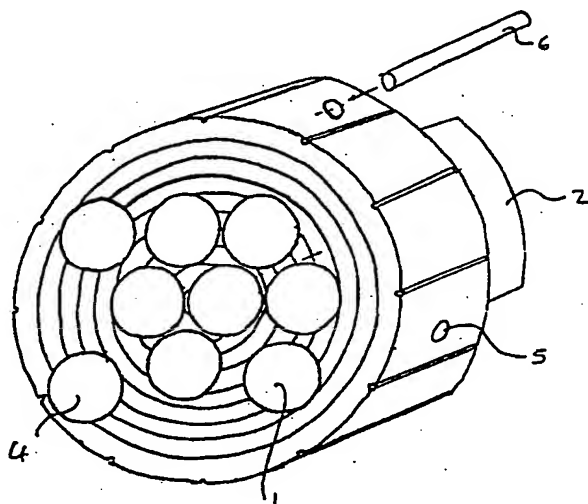


FIGURE 1.

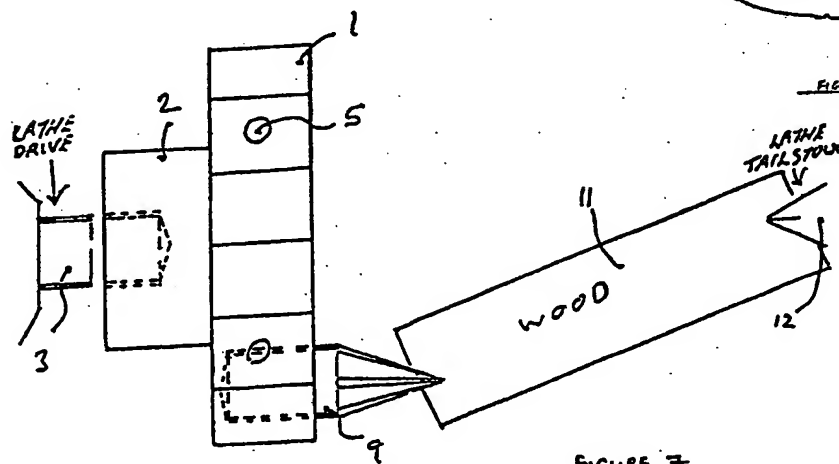


FIGURE 7

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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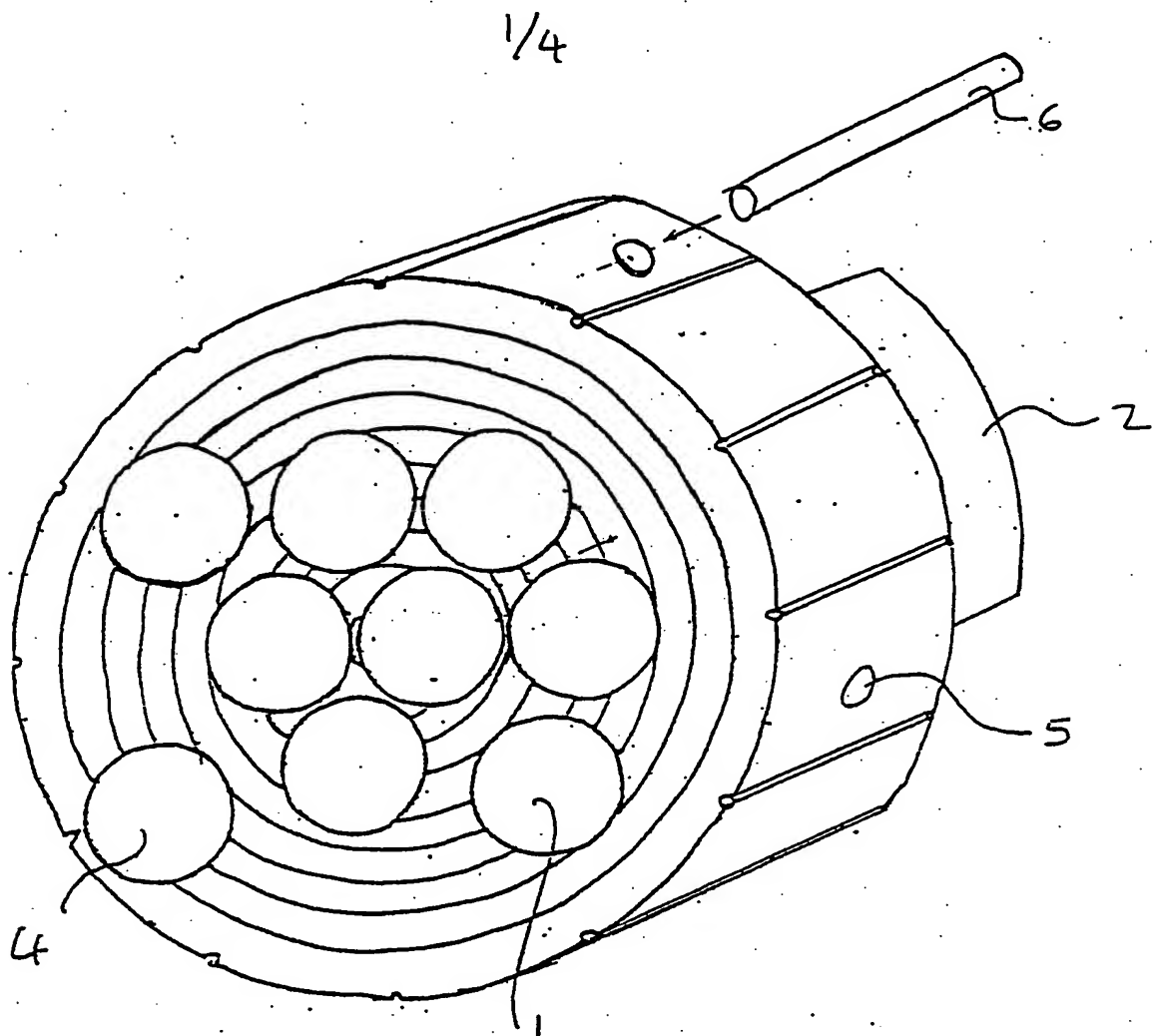


FIGURE 1.

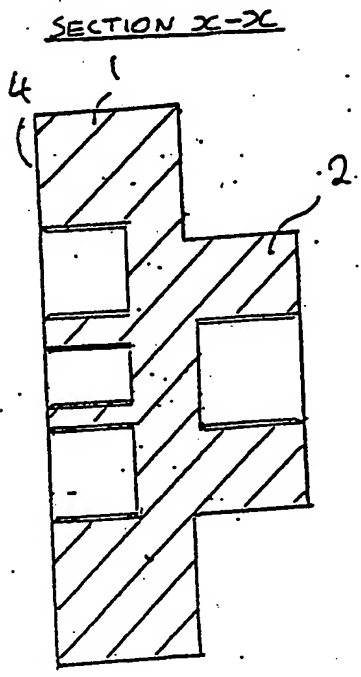


FIGURE 3

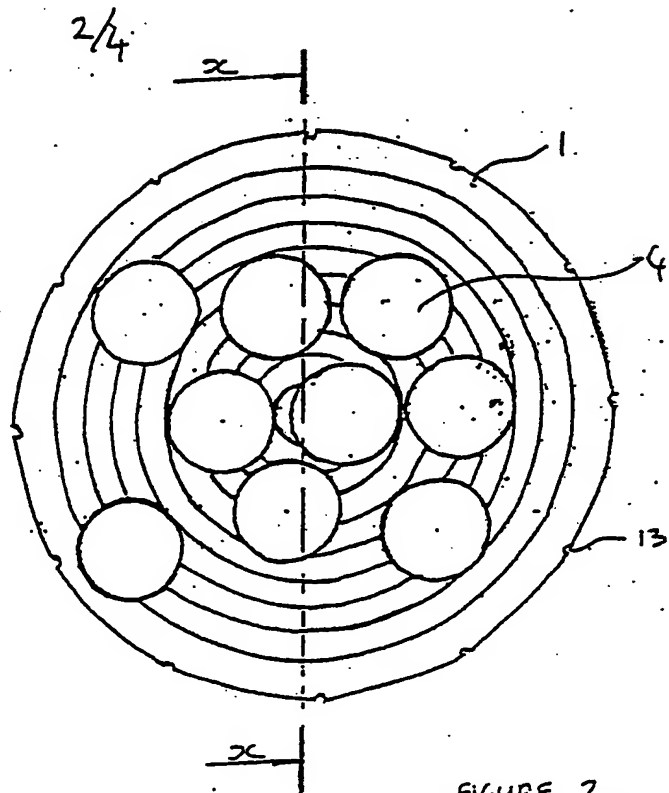


FIGURE 2

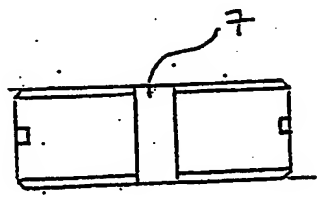


FIGURE 4

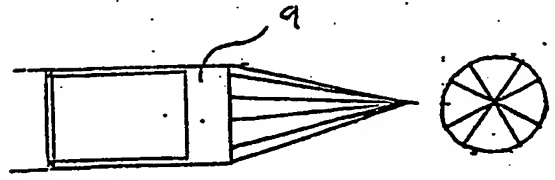


FIGURE 5

3/4

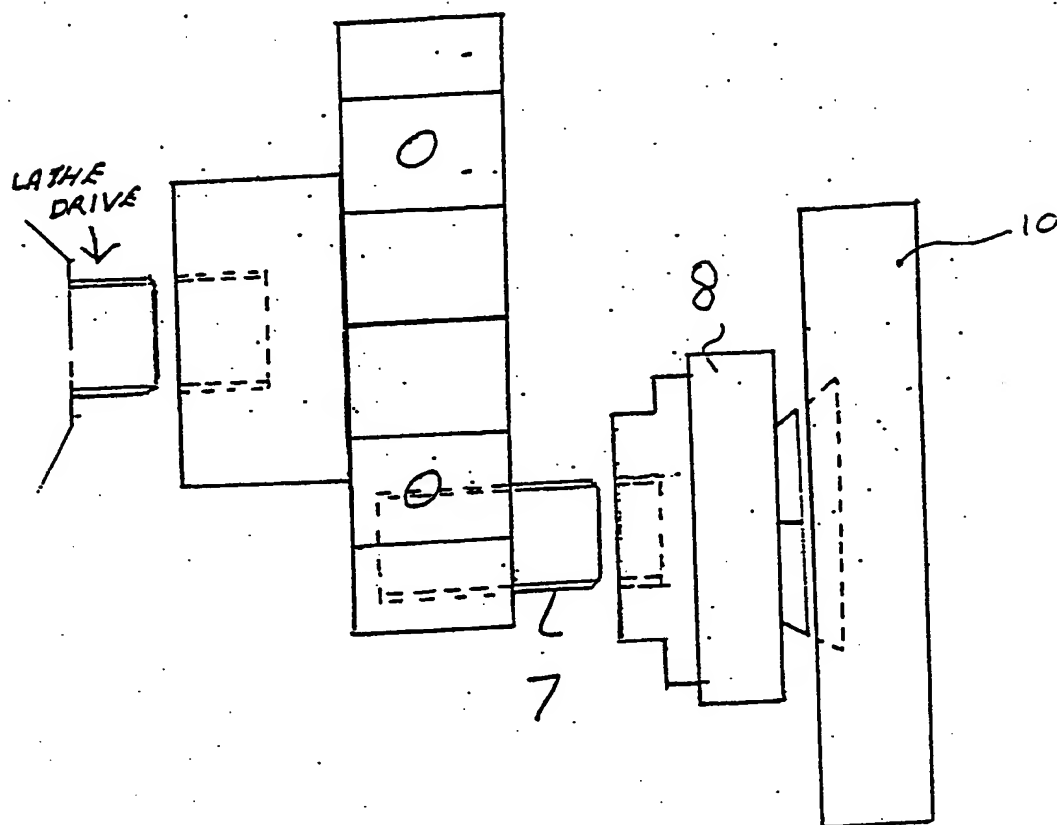
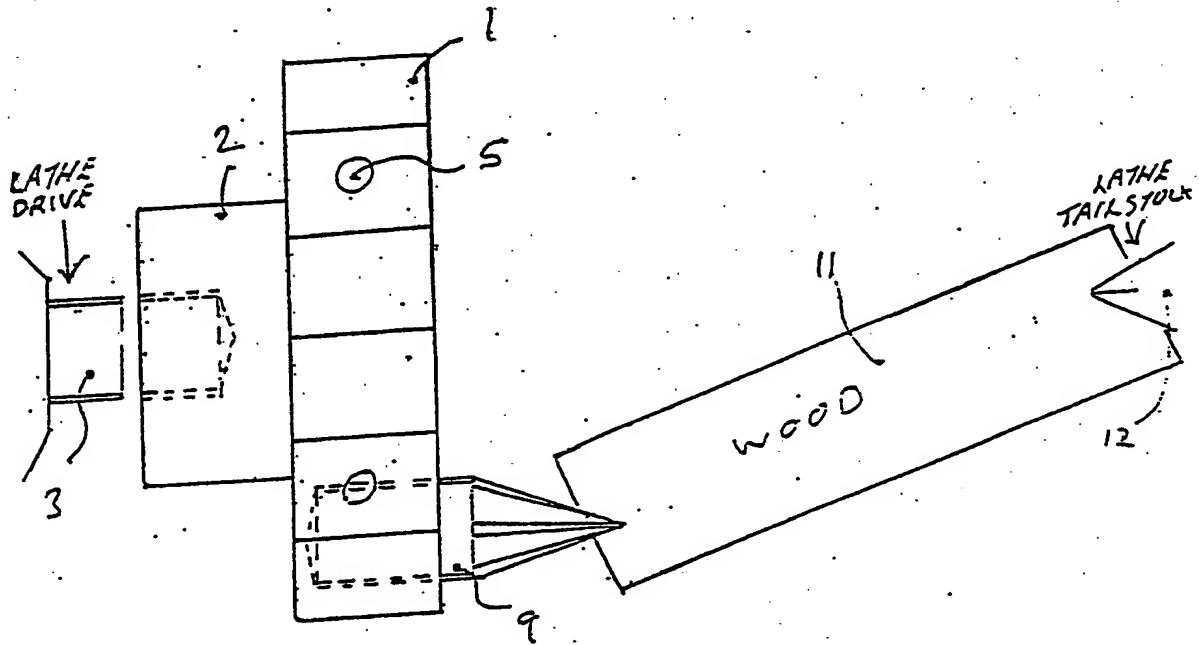


FIGURE 6

4/4

FIGURE 7

2272656**PATENT SPECIFICATION**

The present invention particularly concerns devices for use in woodturning, though they may also be used for shaping other materials.

One problem in woodturning is to be able to vary the centre of concentricity of a cutting tool rapidly and simply. Present devices on the market for doing this use heavy lathes, heavy four jaw chucks and custom made adaptors, which cost in the region of 2000 pounds Sterling.

An object of the present invention is to provide an offset chuck adaptor which is cheaper and simpler than similar devices currently on the market.

Accordingly the present invention comprises, an offset chuck adaptor for use with a lathe comprising a main body having means whereby it can be mounted on a lathe drive, and a front face having a plurality of holes, each offset from the axis of the lathe drive by differing distances. Once the offset chuck adaptor is mounted on the lathe drive, the chuck may be offset from the lathe drive axis by selecting one of the offset holes, each hole being capable of having a chuck for holding the workpiece mounted therein, so that the workpiece can be rotated eccentrically.

In accordance with a feature of the invention the chuck adaptor includes, in combination therewith, at least one tool drive member which can be mounted in a selected one of said holes instead of a chuck so that a workpiece can be held between the tool drive and lathe tailstock so that the member lies inclined to the main axis of the lathe.

In order that the present invention may be more readily understood, an embodiment thereof will now be described by way of example and with reference to the accompanying drawings in which:-

Figure 1. is a perspective view of an offset chuck adaptor, according to the present invention.

Figure 2. is an end view of the adaptor of Fig 1.

2 .

Figure 3. is an axial section through the adaptor of Fig 1.

Figure 4. is a side view of a stud for use with the adaptor of Fig 1.

Figure 5. is a side and end view of a drive tool.

Figure 6. shows the adaptor in use with a chuck.

Figure 7. shows the adaptor in use with the lathe drive of Fig 5.

Referring now to the accompanying drawings, the offset chuck adaptor shown therein comprises a cylindrical metal body, having at its rear a boss 2 which has an internal screw thread so that it can be screwed onto a lathe drive 3.

The front face of the body 1 is formed with nine similar internally screw threaded holes 4 the axis of which lie parallel to the main axis of the adaptor but the individual axis of which are all at different distances from the main axis.

The body 1 is also provided with four radially extending holes 5 in which can be inserted a metal rod 6 so that the adaptor can be locked onto the lathe drive 3.

The holes 4 have two functions. Firstly, each hole is capable of receiving a screw threaded member or stud 7. This stud 7 is of such a length that when screwed into a hole 4 it still stands proud of the front face of the body 1, as shown in Fig 6, a chuck 8 can then be screwed onto the stud 7. Thus by selecting the appropriate hole 4 the chuck 8 can be offset in one of nine positions with respect to the axis of the lathe drive 3. The chuck 8 can be totally standard. The number of holes 4 can of course be greater or less than nine.

The chuck adaptor just described can be used as follows, the description being given with particular reference to Figure 6. In this figure a workpiece of material being worked 10. The material is usually wood but of course the invention is not limited to wood-turning.

3.

Initially the material 10 can be shaped using the lathe by being centrally turned in the conventional manner. For additional working the material is removed from the lathe and the chuck adaptor screwed into place as already described. The chuck 8 is mounted on the stud 7 and the material 10 is mounted on the chuck 8 in the conventional manner. When the lathe is now driven the operator can act on the rotating material 10 with an appropriate tool.

Alternatively the holes 4 can receive a tool member such as the drive for between centres tool 9 shown in Figure 5. Once again by selecting the appropriate hole 4 the offset of this drive tool with respect to the lathe axis can be appropriately selected. In this alternative there is no need for a chuck.

The manner in which drive tool 9 can be used is shown in Figure 7 of the drawings. In this figure a piece of material 11, such as wood which is to be worked on is held between the drive tool 9 and a fixed lathe tailstock 12. When the lathe is driven the end of member 11 held by the drive tool 9 is rotated about a circle the diameter of which is dependant on the displacement of the drive tool 9 from the drive axis. In this way the material 11 can be acted on by a standard cutting tool (not shown).

As can be seen from Figures 1 and 3 the main body 1 of the chuck adaptor has a number of peripheral equispaced grooves 13 which function as markings. In alternative embodiments these markings need not be grooves but could be stamps or etchings etc. The purpose of the markings is to enable the user of the invention to generate a wide variety of shapes in workpieces, by indexing the material as required.

4.

CLAIMS**OFFSET CHUCK ADAPTOR**

1....The Offset Chuck Adaptor (hereafter referred to as the OCA) comprising of the main body, a means of attaching turning accessories (eg. a chuck, a drive centre, or a face plate) at various distances from the central lathe axis, to enable a material to be offset turned.

2....An OCA as claimed in claim 1, wherein the turning accessory may be located via threaded holes at various pre-set distances from the central lathe axis.

3....An OCA as claimed in claim 1 and 2, wherein engraved circles are provided in the face to indicate distances from the central axis.

4....An OCA as claimed in claim 1, has a stud which can be secured one end to the main body via threaded holes, and the other end to a chuck which holds the material to be turned.

5....An OCA as claimed in claim 1, has a pointed drive secured via the threaded holes, designed to hold a material between centres on a lathe whilst not allowing the material to slip during turning.

6.... An OCA as claimed in claim 1, has indexing scores around the circumference of the main body. Specific points of the material being turned may be aligned with any one of these scores in turn, to enable multiple offset patterns to be cut.

7....An OCA as claimed in claim 1, has two Tommy bars, one for loosening the main body, the other (smaller) for loosening the stud and pointed drive, when the lathe drive is in a locked position.

8....An OCA as claimed in claim 1, has holes in the main body, stud and pointed drive, the purpose of which are to locate the Tommy bars as in claim 7.

9....An OCA as claimed in claim 1, has an integral boss with an internal screw thread, the purpose of which is to screw onto a lathe drive of matching thread and diameter.

10.... An OCA substantially as described herein with reference to figures 1 to 7 of the accompanying drawings.

Patents Act 1977 Examiner's report to the Comptroller under Section 17 (The Search report)	Application number GB 9224437.5
Relevant Technical Fields (i) UK Cl (Ed.L) B3B (BHAP1); B5L (ii) Int Cl (Ed.5) B23B Databases (see below) (i) UK Patent Office collections of GB, EP, WO and US patent specifications. (ii) ONLINE DATABASE: WPI	Search Examiner R HOWE
	Date of completion of Search 10 DECEMBER 93
	Documents considered relevant following a search in respect of Claims :- 1-10

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Category	Identity of document and relevant passages	Relevant to claim(s)
	NONE	

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★ DURR/ P54 94-153456/19 ★ GB 2272656-A
Offset chuck adaptor for wood lathe - has main body with attachment
for turning accessories at selected distances from lathe axis

DURRANT I J 92.11.21 92GB-024437

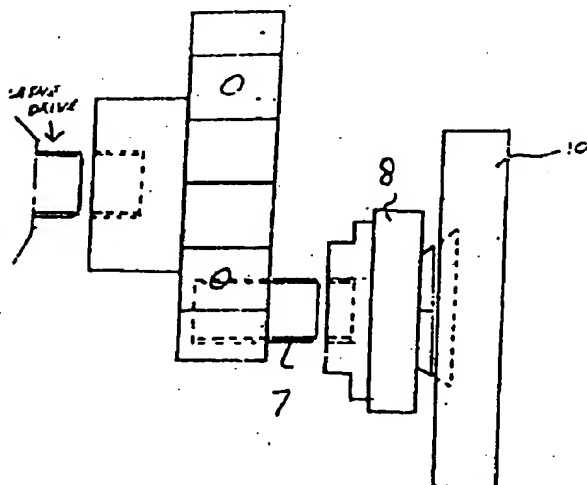
(94.05.25) B23B 31/36

The offset chuck adaptor comprises a main body, and an attachment for turning accessories (e.g. a chuck, a drive centre, or a face plate) at various distances from the central lathe axis, to enable a material to be offset turned.

The turning accessory may be located via threaded holes at various pre-set distances from the central lathe axis.

Engraved circles are provided in the face to indicate distances from the central axis. The adaptor has a stud which can be secured one end to the main body via threaded holes, and the other end to a chuck which holds the material to be turned.

ADVANTAGE - Ease of adjustment of degree of offset. (8pp Dwg.No.6/7)
N04-120485



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